

PATENT ABSTRACTS OF JAPAN

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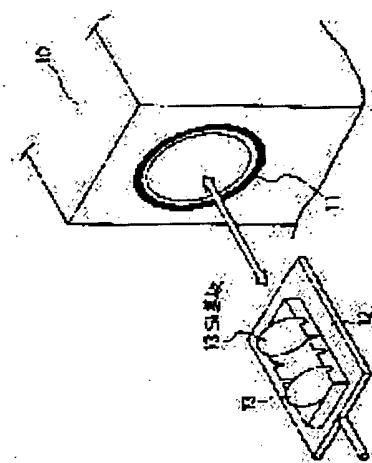
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(54) SEMICONDUCTOR SUBSTRATE AND MANUFACTURE THEREOF

(57)Abstract:

PURPOSE: To manufacture a high-quality LSI having a high gettering power by a method wherein stacking faults are contained in a specified density in a specified range from the surfaces of oxygen-containing semiconductor substrates.

CONSTITUTION: Si substrates 13 are heated in a quartz tube at about 1000°C in a nitrogen atmosphere and after oxygen in the vicinities of the surfaces of the substrates 13 is diffused outwardly and the oxygen concentration in the vicinities of the surfaces is reduced, the substrates are heat-treated in a temperature range of 800 to 850°C in a nitrogen atmosphere and cristobalite SiO₂ is separated in the interiors of the substrates 13. Moreover, the interior of the quartz tube 11 is made into an oxygen atmosphere and when the substrates 13 are heat-treated at a temperature of 1000°C, stacking faults are generated from the cristobalite SiO₂ in a density of 107 to 109/cm³ in a range of about 50 to 100µm from the surfaces of the substrates 13. Finally, by taking out the substrates 13 subsequent to the heat treatment from the tube 11 of a heat-treatment furnace 10 at a speed of 5cm/min, the substrates 13 having a high gettering power can be obtained.



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